1 + 1 = 3
Lenovo + Veeam
Better Together

Solution Brief

Advanced Data Protection Using Veeam and Lenovo Technology

The Challenge

For years, customers with stringent recovery point objectives (RPOs) have used snapshot technology to protect stored data without affecting performance or significantly increasing the amount of storage space consumed. Lenovo ThinkSystem DM Series storage snapshot copies provide a number of advantages: You can use them for "point-in- time" recovery and create a large number of restore points frequently, without impacting production workloads—even during working hours. You can also use these snapshot copies to protect data in certain disaster scenarios. You can replicate them to a secondary, often remote storage system for disaster recovery by using SnapMirror® replication technology, or back up and archive them by using SnapVault® software, which are both standard features included with DM Series storage systems. In short, Lenovo storage snapshot technology combines performance, scalability, and efficient storage utilization to deliver fantastic RPOs.

Now there is a way to get even more from your storage snapshot copies—one that allows you to leverage both storage and hypervisor-based snapshots to achieve the lowest possible RPOs, harness Lenovo ThinkSystem DM Series All-Flash and Hybrid Flash Arrays , dramatically improve recovery time objectives (RTOs), and leverage storage-efficient Lenovo DM Series.

The Solution

Lenovo and Veeam have partnered to integrate support for Lenovo storage snapshot technology into the Veeam Availability Suite. This integration provides customers with a deeper level of protection and availability across Lenovo ThinkSystem DM Series, and Lenovo ThinkSystem DE Series storage platforms. Integration of Veeam Backup & Recovery with Lenovo storage snapshot technology allows you to achieve:

- Faster backups. Back up VMware virtual machines (VMs) directly from Lenovo storage snapshot copies.
- Quick recovery. Recover entire VMs or individual items from Lenovo storage snapshot, and SnapMirror software.
- Improved protection. Create instant secondary backups from Lenovo storage snapshot copies.
- Enhanced scalability. Scale efficiently and effectively, regardless of the size of your environment and number of VMs.
- Better return on Lenovo storage investments through Veeam DataLab capabilities. Use Lenovo storage snapshots and FlexClone® technology to create completely isolated copies of your production environment in just a few clicks, for application development and testing, data analytics, rapid DR compliance testing and more.
- Smooth implementations. The Veeam Availability Platform and Lenovo DM Series is simple to deploy and easy to manage with no agents required.

Key Features

- Create backups from storage snapshots up to 20 times faster than competitive offerings.
- Recover individual items quickly and efficiently from Lenovo storage snapshot, and SnapMirror software.
- Improve disaster recovery protection by creating instant secondary backups from storage snapshots.

Solution Components

Firmware

- ONTAP® 9.4 or later

Software

- Veeam Backup & Replication

Connectivity

- NFS, iSCSI, and Fibre Channel

Deployment modes

- Cluster

Cloning

- Traditional and FlexClone volumes (recommended)

Lenovo

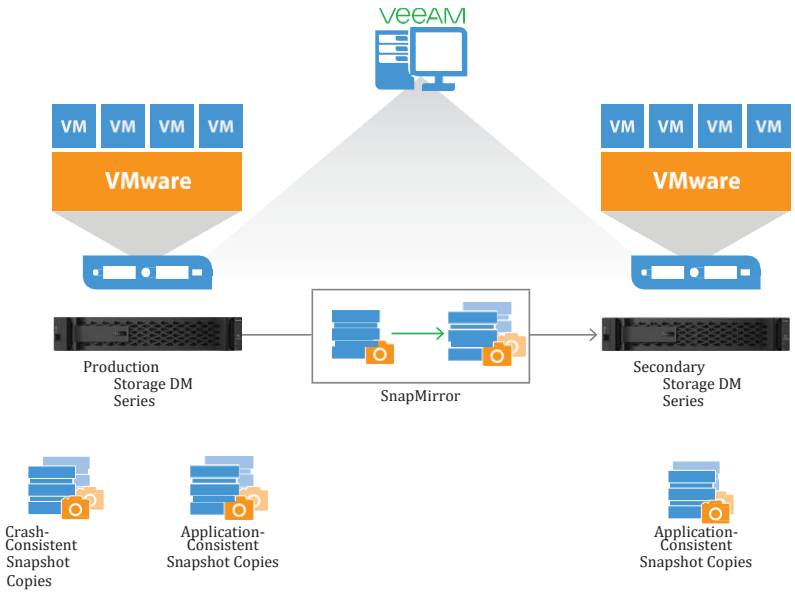

DIAGRAM 1: VEEAM AND LENOVO DELIVER UNIFIED REPLICATION.

Lenovo and Veeam technologies combine to deliver the low RPOs enabled by Lenovo storage snapshot technology with the fast RTOs delivered by Veeam Backup & Replication. Veeam backup from storage snapshots transforms Lenovo storage snapshot copies into backups for quick VM recovery and efficient file-level recovery in VMware environments. Data is read directly from Lenovo storage snapshot copies without the need for VMFS resignaturing, temporary VM registration, host cleanup, or "proxying" of the VMware ESXi server. Veeam does this by leveraging VMware vSphere Changed Block Tracking (CBT), allowing snapshot-derived backups to be created quickly—up to 20 times faster than competitive offerings. What's more, you can replicate these storage snapshot copies to secondary storage systems, whether local or remote, by using SnapMirror. This approach provides customers with the shortest possible backup windows, lowest impact on production VMs, and maximum RPO.

Granular recovery from Lenovo storage snapshot copies

Regardless of the care you take in protecting your organization from data loss, you'll ultimately be called on to restore VMs and application items to a previous state. Legacy backup tools weren't designed to deal with the demands of today's virtual environments and the need for availability. Veeam Explorer for Storage Snapshots allows you to take advantage of the low overhead that periodic array-based snapshots offer by letting you quickly restore guest OS files, application items, or an entire VM in minutes directly from native Lenovo storage snapshot copies. Users can also restore data directly from these storage snapshot copies, eliminating the need for staging. In addition, data and application recoveries can be performed directly from Lenovo storage snapshot copies on primary or secondary Lenovo DM Series storage, helping you maximize your Lenovo storage investments. And Veeam helps reduce the time needed to mount storage snapshot copies by a factor of 10 or more compared with manual processes.

This time efficiency helps you lower your RTOs while avoiding human errors that can occur during critical recovery steps such as mounting storage snapshot copies. The process is simple: Just a few clicks from the Backup & Replication interface are all it takes to restore your data.

A complete, effective data protection solution

One of the best ways to protect data is to follow the "3-2-1" rule—keep three copies of your data stored on two different sets of media with at least one copy stored off site. Veeam provides an easy and efficient way for system administrators to implement a comprehensive data protection strategy.

Veeam Backup Snapshot Vaulting creates primary and secondary backups directly from Lenovo storage snapshot copies—instantly storing one of the backup copies in SnapVault. To do this, Veeam Backup & Replication first creates an application-aware VM snapshot copy followed by a storage snapshot copy. Once the storage snapshot copy is created, the VM snapshot is released and the Veeam proxy server creates a new backup file.

By combining the low RPO capabilities of storage snapshot copies with Veeam's fast RTO enablement, Veeam and Lenovo provide customers with unprecedented levels of data protection and a simple, easy-to-manage suite of capabilities that delivers affordable, industry-leading performance.

Veeam Explorers for Microsoft Exchange and SharePoint provide instant visibility and granular recovery of individual items. Veeam provides this same fast, agentless, and easy recovery to Microsoft SQL Server databases and Microsoft Active Directory, making item-level recovery even easier while continuing to enable the lowest RPOs and RTOs available. Veeam Explorer for Oracle can also be leveraged by administrators to get fast, transaction- level recovery across Oracle database environments. Integration of Lenovo storage snapshot capabilities into Veeam Backup & Replication helps customers get more value out of their backup data by reducing operational and management costs while delivering advanced data protection for the modern data center.

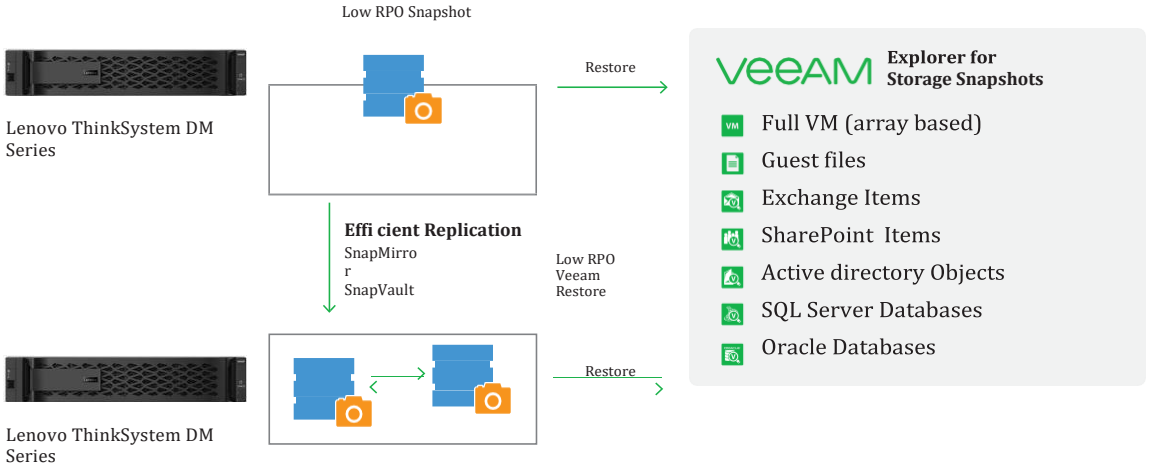

DIAGRAM 2: VEEAM EXPLORER FOR STORAGE SNAPSHOTS USED WITH LENOVO SNAPSHOT COPIES.

Enterprise scalability

The exponential growth of data and provisioned IT services is forcing businesses and enterprises of all sizes to rethink their availability strategy.

Veeam scales efficiently and effectively and provides benefits that include:

- Backup acceleration technologies that double I/O performance and shorten backup windows by up to five times—all while reducing load on primary storage, backup storage, and vCenter Servers
- Full VM restore acceleration technologies with custom-tailored logic for raw disk, deduplicating storage, and tape, greatly improving VM restore performance processing engine enhancements that let you scale for large environments and efficiently process jobs containing thousands of VMs or millions of files

Veeam On-Demand Sandbox for Storage Snapshots

Veeam On-Demand Sandbox for Storage Snapshots integrates with NetApp Snapshot and FlexClone technology, giving you another way to leverage your NetApp storage investment.

Using this capability, you can provision a complete, isolated copy of your production environment in just a few clicks by running copies of production VMs directly from FlexClone copies on NetApp primary or secondary storage. This allows you to test updates or troubleshoot your production environment—plus a variety of similar use cases—at the full speed and scale of production storage.

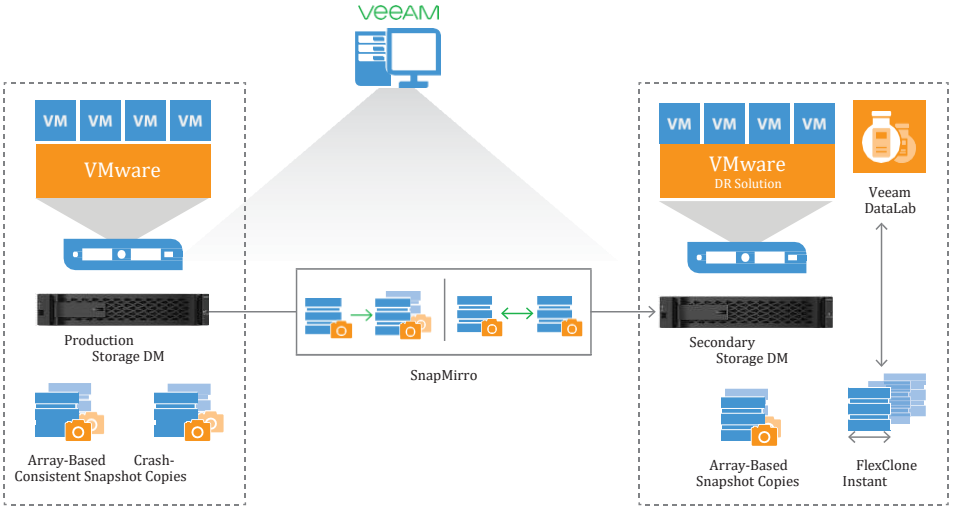

DIAGRAM 3: VEEAM ON-DEMAND SANDBOX WITH LENOVO SNAPSHOT AND FLEXCLONE TECHNOLOGY.

Ease of implementation

As an agentless architecture that directly integrates with VMware vSphere and Microsoft Hyper-V, Veeam Backup & Replication is simple to install and manage. When Veeam is combined with Lenovo powered storage solutions, businesses can simplify IT operational management, significantly improve application availability, and mitigate risk.

About Veeam

With the growth and sprawl of today's data, traditional data management is not enough. As the leader in Availability across multi-cloud environments, Veeam® is uniquely positioned to help customers along their journey to Intelligent Data Management. Veeam is the global leader in Intelligent Data Management. Veeam Availability Platform is the most complete solution to help customers on the journey to automating data management and ensuring the availability of data. We have more than 330,000 customers worldwide, including 75 percent of the Fortune 500 and 58 percent of the Global 2000.

About Lenovo

Lenovo (HKSE: 992) (ADR: LNVGY) is a US$45 billion Fortune Global 500 company and a global technology leader in driving Intelligent Transformation through smart devices and infrastructure that create the best user experience. Visit our website at http://www. lenovo.com/.